

Report on environmental water use – New South Wales

New South Wales' annual report on environmental water use (Schedule 12, Item 9.3)

Reporting context

The additional water made available for the environment under the Basin Plan is aiming to: restore and improve the resilience of rivers, wetlands and floodplains; connect rivers to their floodplains and the sea; improve the health of fish, birds and vegetation populations; and keep water fit for environmental use.

In 2013-14, environmental water was delivered for the first time to meet Basin scale, or whole-of-Basin, priorities. This is a major change to the way environmental water is used in the Basin – it has increased the emphasis on managing the Basin as one system.

The purpose of this report is to monitor how much water was delivered to the environment and for what purpose. This report is a requirement of Chapter 13 of the Basin Plan and relates to Item 9.3 of Schedule 12.

This report covers:

- held environment water (HEW) in regulated systems;
- where possible, Planned Environmental Water (PEW) in regulated systems (e.g., Environmental Contingency Allowance in Lachlan, Murrumbidgee and similar PEW accounts in Macquarie, Gwydir);
- where possible, HEW or PEW in unregulated systems (e.g. embargoed flow event).

Indicators for measuring success

Indicator 9.3 reports on the purpose and consequences of environmental water use. This indicator incorporates several elements:

- Purpose of environmental watering (**Indicator 9.3.1**)
- How watering aligned with the Basin-wide Environmental Watering Priorities (**Indicator 9.3.2**)
- How much environmental water was used to meet the purpose (**Indicator 9.3.3**)
- Consequences of environmental use of water (**Indicator 9.3.4**)

Indicator 9.3: Purpose and consequences of environmental water use

Response									
a. Geographic identifier (refer note 1)	b. Catchment (refer note 2)	c. Primary Purpose(s) (refer note 3)	d. Secondary Purpose(s) (refer notes 3 & 4)	e. Degree of alignment (refer note 5)	f. Relevant priority (refer note 6)	g. Volume used (ML) (refer note 7) (refer note 11)	h. Time period (refer note 8)	i. Availability of map and/or hydrograph (refer note 9)	j. Additional comments (optional - refer note 10)
Mallowa Creek	Gwydir	(Ecosystem) Process	Vegetation	Yes	2. Gwydir wetlands	20,000 ML CEW	26/09/2013 – 01/03/2014	Yes	Colonial waterbirds
Mehi River	Gwydir	(Ecosystem) Process	Fish	Yes	2. Gwydir wetlands	8,000 ML CEW	25/10/2013 – 18/11/2013	Yes	
Carole Creek	Gwydir	(Ecosystem) Process	Fish	Yes	2. Gwydir wetlands	3,915 ML CEW	31/10/2013 – 29/11/2013	Yes	
Gingham and Lower Gwydir	Gwydir	(Ecosystem) Process	Vegetation	Yes	2. Gwydir wetlands	1,000 ML EWA	7/04/2014 - 11/04/2014	Yes	Additional 1,900 ML delivered from natural flows protected under 3T and supplementary rules in WSP; This event will return a volume of water that has been extracted

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									by upstream irrigation and add to currently wet areas and maintain a functional wetland
Noonamah-Lake Bullogal southern	Lachlan	Other vertebrates	Ecosystem resilience	Yes	4. Lower Lachlan wetlands	79 ML NSW	11/01/2014 - 28/02/2014	Yes	Southern Bell Frog
Burrawang West Lagoon	Lachlan	Vegetation	Other vertebrates	Yes	4. Lower Lachlan wetlands	250 ML NSW	17/04/2014 - 27/05/2014	Yes	Purple Spotted Gudgeon and Frog species
Lower Lachlan/Cumbung	Lachlan	Ecosystem resilience	Vegetation	Yes	4. Lower Lachlan wetlands	22,794 ML CEW	01/07/2013 – 15/07/2013	Yes	
Macquarie Marshes	Macquarie	Ecosystem resilience	Vegetation	Yes	3. Macquarie Marshes	10,985 ML NSW, 10,000 ML CEW, 43,675 ML EWA	15/07/2013 - 6/11/2013	Yes	Habitat for colonial waterbird breeding and native fish
Piggyback flow	Murrumbidgee	Not Applicable	Not Applicable	Not Applicable	5. Mid-Murrumbidgee wetlands	0 ML	Not Applicable	Not Applicable	Planned environmental flow releases have been postponed indefinitely. The required base flow triggers have not been met and the rainfall outlook for the rest of the month shows no sign of any significant falls.
Loorica Lake	Murrumbidgee	Waterbirds	Other vertebrates	Yes	5. Mid-Murrumbidgee wetlands	5,217 ML CEW	26/08/2013 - 03/09/2013; 27/09/2013 - 07/10/2013	Yes	Additional environmental water to Basin Plan requirements
Eulimbah	Murrumbidgee	Ecosystem resilience	Other vertebrates	Yes	5. Mid-Murrumbidgee wetlands	3,809 ML CEW	26/08/2013 – 3/09/2013; 27/09/2013 – 7/10/2013	Yes	Southern Bell Frog; Additional environmental water to Basin Plan requirements
Nap Nap Swamp	Murrumbidgee	Vegetation	Waterbirds	Yes	5. Mid-Murrumbidgee wetlands	2,475 ML CEW	1/11/2013 – 14/11/2013	Yes	Southern Bell Frog and colonial waterbirds; Additional environmental water to Basin Plan requirements
Narwie to Penarie Creek	Murrumbidgee	Vegetation	Population resilience	Yes	5. Mid-Murrumbidgee wetlands	3,000 ML CEW, 4,850 ML EWA	11/10/2013 - 5/12/2013	Yes	Additional environmental water to Basin Plan requirements
South Yanga NP	Murrumbidgee	Vegetation	Waterbirds	Yes	5. Mid-Murrumbidgee wetlands	29,450 ML CEW, 34,440 ML EWA	1/11/2013 - 18/1/2014	Yes	Bat species; Additional environmental water to Basin Plan requirements
Oak Creek/Gras Innes Swamp	Murrumbidgee	Vegetation	Population resilience	Yes	5. Mid-Murrumbidgee wetlands	814 ML EWA, 550 ML EWA	23/09/2013 - 15/11/2013;	Yes	

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							20/04/2014 – 30/04/2014		
Coonacoocabil Lagoon	Murrumbidgee	Connectivity	Population resilience	Yes	5. Mid-Murrumbidgee wetlands	500 ML EWA	16/09/2013 - 30/09/2013	Yes	Recent surveys found that this site is an important refuge for native aquatic species and its maintenance is a priority
Silver Pines/Yanco Creek	Murrumbidgee	Vegetation	Population resilience	Yes	5. Mid-Murrumbidgee wetlands	775 ML EWA	27/09/2013 - 1/10/2013	Yes	
North Redbank	Murrumbidgee	Connectivity	Population resilience	Yes	5. Mid-Murrumbidgee wetlands	49,880 ML CEW, 12,825 ML EWA	14/10/2013 - 30/01/2014	Yes	Significant waterbird response to the event; Additional environmental water to Basin Plan requirements
Tuckerbil Swamp	Murrumbidgee	Waterbirds	Vegetation	Partial	5. Mid-Murrumbidgee wetlands	318 ML EWA	6/11/2013 - 20/11/2013	Yes	Follow-up watering was unable to be delivered due to MI works preventing the delivery of water
Turkey Flats	Murrumbidgee	Vegetation	Waterbirds	Yes	5. Mid-Murrumbidgee wetlands	242 ML EWA	31/10/2013 - 13/12/2013	Yes	
Yanco Ag Lagoon	Murrumbidgee	Vegetation	Waterbirds	Yes	5. Mid-Murrumbidgee wetlands	468 ML EWA	31/10/2013 - 1/12/2013	Yes	Community education about wetlands and water management; Increase in numbers of wood and pacific black ducks, decline in grey teal and absence of harheads, small number of black-tailed native hens
North Yanga NP	Murrumbidgee	Vegetation	Waterbirds	Yes	5. Mid-Murrumbidgee wetlands	1,540 ML CEW, 21,085 ML EWA	20/11/2013 - 9/01/2014	Yes	Event will also result in drought recovery and increase resilience; Additional environmental water to Basin Plan requirements
Mollys Lagoon	Murrumbidgee	Fish	Vegetation	Yes	5. Mid-Murrumbidgee wetlands	3,785 ML EWA	16/01/2014 - 26/01/2014	Yes	Prevent the wetland from drying over summer
Uara Creek to Yanga (Avalon Swamp)	Murrumbidgee	Vegetation	Waterbirds	Yes	5. Mid-Murrumbidgee wetlands	16,005 ML CEW, 6,676 ML EWA	03/03/2014 - 30/06/2014	Yes	Also improve habitat for native fish and reduce the severity of algal blooms; Additional environmental water to Basin Plan requirements
Yarrowol to Paika Lake	Murrumbidgee	Vegetation	Ecosystem diversity	Yes	5. Mid-Murrumbidgee wetlands	10,017 ML CEW, 3,633 ML EWA	25/03/2014 - 21/05/2014	Yes	Increase water levels will allow strategic planting of aquatic plants;

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									Additional environmental water to Basin Plan requirements
Fiddlers Creek to Yanga NR	Murrumbidgee	Vegetation	Ecosystem resilience	Yes	5. Mid-Murrumbidgee wetlands	11,144 ML NSW, 11,887 ML CEW, 15,437 ML EWA	20/03/2014 - 30/06/2014	Yes	Additional environmental water to Basin Plan requirements
Tuckerbil Swamp	Murrumbidgee	Waterbirds	Choose an item.	Not Applicable	5. Mid-Murrumbidgee wetlands	0 ML	Not Applicable	Not Applicable	Cancelled due to Murray Irrigation works preventing the delivery of water at the time
Coonancoocabil Lagoon	Murrumbidgee	Vegetation	Fish	Not Applicable	5. Mid-Murrumbidgee wetlands	0 ML	Not Applicable	Not Applicable	Cancelled due to Murray Irrigation works preventing the delivery of water at the time
Nap Nap to Waugorah Lagoon	Murrumbidgee	Vegetation	Fish	Not Applicable	5. Mid-Murrumbidgee wetlands	0 ML	Not Applicable	Not Applicable	Awaiting supplementary announcement. Postponed until 4/07/2014
Darling Anabranh	Murray	Connectivity	Vegetation	Yes	6. Lower Murray River system	8,243 ML NSW, 47,000 ML CEW	16/09/2013 - 9/12/2013	Yes	Improve fish habitat
Rilverside	Murray	Vegetation	Population resilience	Yes	9. Mid-Murray River	230 ML NSW	13/09/2013 - 14/10/2013	Yes	
Private Property Wetlands (MI)	Murray	Ecosystem diversity	Ecosystem resilience	Yes	9. Mid-Murray River	516 ML NSW	5/10/2013 – 4/01/2014; 1/04/2014 – 14/04/2014	Yes	Private watering event. Top up watering occurred during the event to maximise ecological outcomes. Also helped vegetation
Tuppal Creek	Murray	Water quality (chemical)	Fish	Yes	9. Mid-Murray River	2,725 ML NSW, 2,562 ML CEW	8/10/2013 - 6/12/2013; 26/03/2014 – 28/04/2014	Yes	Event will replenish refuge pools and build upon ecological responses initiated by previous environmental flows
Fletchers Creek	Murray	Vegetation	(Ecosystem) Process	Yes	9. Mid-Murray River	291 ML NSW	10/12/2013 - 16/12/2013; 02/04/2014-08/04/2014	Yes	Integrate science with traditional wetland knowledge and management, and develop sound working partnerships
Lock 8/9 weirpool manipulation	Murray	Connectivity	(Ecosystem) Process	Yes	6. Lower Murray River system	216 ML CEW	16/10/2013 - 30/04/2014	Yes	Trial a water balance model
MUR multi site trial stage 1 & 2 / Edward Wakool fish flows	Murray	Connectivity	Fish	Yes	9. Mid-Murray River	100,000 ML CEW, 67,994 ML TLM	4/10/2013 - 16/12/2013	Yes	Support native vegetation, improve water quality and investigate different flow options to benefit native fish

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Thegoa	Murray	Connectivity	(Ecosystem) Process	Not Applicable	6. Lower Murray River system	0 ML	Not Applicable	Not Applicable	Improve vegetation; The event was planned, but due to a change in conditions, the Request to Deliver Environmental Water was never sought, and the event never occurred
Rilverside	Murray	Vegetation	Waterbirds	Yes	9. Mid-Murray River	69 ML NSW	6/12/2013 - 12/12/2013	Yes	Support frogs; Provided further opportunity for wetland plants to recruit; An autumn water event could provide further opportunity for Brolga pair and swan breeding
Reed Beds Swamp / Gulpa Creek	Murray	Waterbirds	Vegetation	Yes	9. Mid-Murray River	13,016 ML NSW, 1,000 ML TLM	14/12/2013 - 16/02/2014	Yes	Provide continued flows through Gulpa Creek
St Helena Swamp (Murray Valley NP – Millewa Precinct)	Murray	Waterbirds	Vegetation	Yes	9. Mid-Murray River	750 ML CEW, 1,518 ML TLM	14/12/2013 - 30/12/2013	Yes	Provide continued flows through Edward River and increase macrophyte growth in St Helen Swamp
Yallakool fish flow recession	Murray	Fish	(Ecosystem) Process	Yes	9. Mid-Murray River	8,494 ML CEW	17/12/2013 - 6/02/2014	Yes	Ecological flows for fish cues
Niemur River	Murray	Water quality (chemical)	Fish	Yes	9. Mid-Murray River	5,759 ML CEW	07/02/2014 - 14/03/2013	Yes	Flows to reduce the risk of high water temp and adverse environmental impacts
Reed Beds Creek (Werai)	Murray	Vegetation	(Ecosystem) Process	Yes	9. Mid-Murray River	512 ML NSW	20/02/2014 - 23/02/2014	Yes	River Red Gum
Sandridge Wetland	Murray	Vegetation	(Ecosystem) Process	Yes	9. Mid-Murray River	43 ML NSW	12/04/2014 - 16/04/2014	Yes	Improve drought impacted vegetation and improve fauna habitat
Pinchgut Lagoon	Murray	Fish	Choose an item.	Not Applicable	9. Mid-Murray River	0 ML	Not Applicable	Not Applicable	Southern Pygmy Perch; The event was planned, but due to a change in conditions, the Request to Deliver Environmental Water was never sought, and the even never occurred
Speewa Creek	Murray	Connectivity	Vegetation	Yes	9. Mid-Murray River	500 ML NSW	24/05/2014 - 28/06/2014	Yes	Improve the health of wetland and riparian vegetation and associated fauna; To conduct a trial watering event to reconnect Speewa Creek with the Murray River

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Gwynnes Creek (Aintree)	Murray	(Ecosystem) Process	Ecosystem resilience	Yes	9. Mid-Murray River	112 ML NSW	1/04/2014 - 13/04/2014	Yes	Trial watering in order to improve and maintain ephemeral creek systems of the Edward-Wakool System; Ecological values associated with this system will be considered for future objectives following this trial
Bottle Bend Reserve	Murray	Vegetation	(Ecosystem) Process	Yes	9. Mid-Murray River	2,000 ML NSW	21/05/2014 - 21/06/2014	Yes	This event ran into the 14/15 water year

NOTES

Note 1 - Geographic identifier could mean river reach (i.e. between model nodes) or site/asset name.

Where possible, spatial data should be provided to locate each geographic identifier. The format of the spatial data has not yet been specified, but may include shapefiles, MapInfo tab files and/or point coordinates."

Note 2 - The catchment(s) that contain the geographic identifier are requested to allow spatial representation of environmental watering use

Note 3 - Select the purpose(s) for environmental water use at the geographic identifier

Note 4 - If environmental water use at the geographic identifier had more than two purposes, list the other purposes in the Additional Comments field

Note 5 - For any watering actions that are undertaken not in accordance with the Basin annual environmental watering priorities, a statement of reason must be provided to the MDBA (via the separate Statement of Assurance self-assessment checklist template)

Note 6 - Select the [relevant priority](#) corresponding to environmental water use. If environmental water use at the geographic identifier achieved more than one priority, list the other priorities in the Additional Comments field.

2013-14 Annual Watering Priorities
1. Northern Basin wetlands: Improve the resilience of colonial waterbird populations by supporting breeding events and improving breeding habitat in the Northern Basin wetlands.
2. Gwydir wetlands: Improve the condition and maintain the extent of wetland vegetation communities in the Gwydir wetlands (including Ramsar sites) by restoring hydrological connectivity and a flow regime that meets ecological requirements.
3. Macquarie Marshes: Improve ecosystem resilience amongst wetland vegetation communities in the Macquarie Marshes including Ramsar listed sites.
4. Lower Lachlan wetlands: Improve ecosystem resilience amongst wetland vegetation communities in the lower Lachlan wetlands
5. Mid-Murrumbidgee wetlands: Improve the condition of wetland vegetation communities in the mid-Murrumbidgee wetlands through a winter or spring fresh.
6. Lower Murray River system: Improve vegetation condition in wetlands and floodplains and provide cues for native fish recruitment and movement in the lower Murray River system by enhancing in-stream flow variability.
7. Barwon-Darling River: Improve habitat and provide opportunities for migration and reproduction of native fish in the Barwon-Darling River system by increasing flow variability and hydrological connectivity.
8. Lower Goulburn River: Improve habitat and provide opportunities for migration and reproduction of native fish in the lower Goulburn River through re-instating a variable flow regime which includes a large 'in-channel' spring/summer fresh.
9. Mid-Murray River: Improve habitat and provide opportunities for migration and reproduction of native fish in the mid-Murray River, including the Edward-Wakool and other smaller anabranches, distributary creeks and low-lying wetlands throughout the region.
10. Coorong, Lower Lakes and Murray Mouth: Facilitate Ruppia recovery by ensuring appropriate flows into the Coorong; and maintain the connection between the Lower Lakes to improve the water quality in Lake Albert.

Note 7 - Total volume used to achieve the specified purpose(s) at the geographic identifier. May be reported per entitlement holder if desired.

Note 8 - Time period during the year when environmental water use occurred. May be single date or period(s)

Note 9 - This reportable property is designed to capture evidence of the consequences of the environmental water use (where possible). This evidence may come in the form of a map (i.e. of inundation extent) and/or hydrograph (observed or modelled) where relevant and able to be generated. This data will support case study narrative reporting on environmental water use.

This field is intended to identify where inundation maps or hydrograph data can be generated and supplied."

Note 10 - This simply provides a mechanism to capture any additional relevant information that may further explain or qualify other responses.

Note 11 – The total water volumes reported includes water that was delivered via inter-valley trading and contributed to achieving environmental benefits in NSW.

Note 12 – CEW = Commonwealth Environmental Water, EWA = Environmental Water Allocation accrued under the Water Sharing Plan, TLM = The Living Murray

Note 13 – For the purpose of reporting against this matter (Matter 9.3), watering at the Darling Anabranch and Lock 8/9 weirpool manipulation are recorded as taking place within the Lower Murray Catchment in accordance with the 2013-14 Murray-Darling Basin Watering Priorities.